

Docket No.: W0571.70010US02
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Thomas Tuschl et al.
Serial No.: 09/821,832
Confirmation No.: 6240
Filed: March 30, 2001
For: RNA SEQUENCE-SPECIFIC MEDIATORS OF RNA
INTERFERENCE
Examiner: L. V. Wollenberger
Art Unit: 1635

Certificate of Electronic Filing Under 37 CFR 1.8

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being transmitted via the Office electronic filing system in accordance with § 1.6(a)(4).

Dated: July 31, 2009

Electronic Signature for Eileen M. MacKenzie: /Eileen M. MacKenzie/

MAIL STOP PETITIONS
COMMISSIONER FOR PATENTS
WASHINGTON, D.C. 22313-1450

PETITION IN RESPONSE TO PETITION TO REVOKE
POWER OF ATTORNEY UNDER 37 C.F.R. § 1.36(a)

Madam:

Whitehead Institute for Biomedical Research ("Whitehead"), Massachusetts Institute of Technology ("M.I.T."), and the University of Massachusetts ("UMass"), each assigned an interest in the above-referenced patent application, respectfully submit this Petition in opposition to Max-Planck-Gesellschaft Zur Forderung Der Wissenschaften E.V.'s ("Max Planck's") Petition to Revoke Power of Attorney Under 37 C.F.R. § 1.36(a) submitted on July 20, 2009 (the "Max-Planck Petition") in the above-reference patent application, as well as various continuations and divisionals of the above application ("Tuschl I applications").

Petitioners request that the Max-Planck Petition be denied. The Max-Planck Petition is an improper attempt to wrongfully block all further prosecution of the Tuschl I applications, contrary to Max-Planck's contractual obligations to the other co-assignees of these applications (Whitehead, M.I.T., and UMass). In filing its Petition, Max-Planck has misled the United States Patent and Trademark Office concerning the existence of contractual agreements among the four

applicants governing prosecution of the applications, and has failed to make the requisite showing of “sufficient cause” under 37 C.F.R. § 1.36(a).

First, Max-Planck failed to disclose in its Petition that it has a contractual obligation under two contracts in which it *agreed* that Whitehead “shall manage” and have “primary responsibility” for the “patent filing, prosecution and maintenance of the [Tuschl I invention] applications.” (Exhibit A (2001 Joint Invention and Joint Marketing Agreement (“2001 Agreement”)); Exhibit B (2003 Joint Invention and Joint Marketing Agreement for RNAi Therapeutic Purposes (“2003 Agreement”))).¹ Under these agreements, Max-Planck also undertook a contractual obligation to “cooperate” with Whitehead in its prosecution of the applications. Specifically, the 2001 Agreement states:

WHITEHEAD shall manage the patent filing, prosecution and maintenance of the [Tuschl I invention]. M.I.T., UMASS, and [Max-Planck] will be copied on all patent correspondence. The ***prosecution, filing and maintenance*** of all [Tuschl I invention] patent applications and patents will be the ***primary responsibility of WHITEHEAD***; provided, however, M.I.T., UMASS, and [Max-Planck] ***will have reasonable opportunities to advise WHITEHEAD and will cooperate with WHITEHEAD*** in such prosecution, filing and maintenance.

Exhibit A (2001 Agreement) at 2 (emphasis added).

Similarly, the 2003 Agreement provides:

The ***patent filing, prosecution and maintenance*** of the [Tuschl I invention] ***shall be managed by and be the primary responsibility of WHITEHEAD***. WHITEHEAD shall (i) keep [M.I.T. and Max-Planck] and the THERAPEUTIC LICENSEES reasonably informed as to the filing, prosecution, and abandonment of the [Tuschl I invention], (ii) furnish [M.I.T. and Max-Planck] and the THERAPEUTIC LICENSEES copies of documents relevant to any such filing, prosecution, maintenance and abandonment, and (iii) ***allow [M.I.T. and Max-Planck] reasonable opportunity to comment and advise on patent attorneys to be used and documents to be filed*** with any patent office which would affect the [Tuschl I invention], and (iv) give good faith consideration to the comments and advice of [M.I.T. and Max-Planck] and the THERAPEUTIC LICENSEES.

Exhibit B (2003 Agreement) at 2 (emphasis added).

¹ 37 CFR 10.23(c)(2) prohibits practitioners before the Office from giving misleading information to the Office.

Thus, these agreements clearly delineate the roles that the parties are to play in the prosecution of the Tuschl I applications. Max-Planck has contracted with the other co-owners to give Whitehead the “primary responsibility” of “manag[ing]” the Tuschl I prosecution. Moreover, Max-Planck has agreed to limit its own role in prosecution to “advis[ing]” Whitehead on the patent attorneys to be used and documents to be filed as well as to “cooperat[ing]” with Whitehead. The decision to use Wolf Greenfield & Sacks, P.C. (“Wolf Greenfield”) as the prosecuting law firm therefore is Whitehead’s decision. Max-Planck’s unilateral submission of this Petition to revoke the power of attorney previously granted to Wolf Greenfield is inconsistent with its contractual duty to “cooperate” with Whitehead, and goes far beyond “advis[ing]” Whitehead on its choice of prosecution counsel, a choice delegated to Whitehead alone. Simply put, the Petition to Revoke is an improper attempt by Max-Planck to delay if not prevent the prosecution of the Tuschl I applications while it continues prosecuting its solely-owned Tuschl II applications, to the great prejudice of its co-assignees. The submission of this Petition could not possibly meet the “sufficient cause” standard of 37 C.F.R. § 1.36(a).

Second, *In re Goldstein*, 16 USPQ2d 1963 (Dep. Ass’t. Com’r. for Patents 1988), the sole case relied upon by Max-Planck in its Petition, is inapposite. Unlike in *In re Goldstein*, Max-Planck, as explained above, is a party to two contracts under which it agreed that Whitehead would “manage” the prosecution of the Tuschl I applications and that Max-Planck’s role would be limited to “reasonable opportunities to advise Whitehead” and an obligation to “cooperate with Whitehead in such prosecution.” No such contract existed between the co-assignees in *In re Goldstein*. Instead, the Deputy Assistant Commissioner’s reasoning was based on the mere fact that because neither assignee owned the entire interest in the application, neither alone could control the prosecution of the application. *Id.* at 1964. In contrast, in the instant Tuschl I applications, Max-Planck has contracted with the other co-owners to vest in Whitehead the responsibility to manage prosecution of the Tuschl I applications, including the selection of prosecution counsel.

Third, the parties have filed numerous briefs, declarations, and exhibits in *Max-Planck, et al. v. Whitehead, et al.*, Civ. Action No. 1:09-cv-11116-PBS (D. Mass.) and in *Max-Planck v.*

Wolf Greenfield & Sacks, P.C., Civ. Action No. 1:09-cv-11168-PBS (D. Mass.).² The parties' submission of thousands of pages of factual materials in their briefing to the Court demonstrates, if nothing else, that the facts are far more complex than Max-Planck revealed in its Petition; that Max-Planck is motivated to delay or block prosecution of the Tuschl I applications in favor of its own Tuschl II applications; and that Whitehead and the other co-assignees will suffer substantial and irreparable injury if Max-Planck is permitted to do so. Whitehead believes that Wolf Greenfield has carried out its obligations properly and appropriately, and Max-Planck has not identified any specific statement made by Ms. Lockhart or Ms. Granahan or explained how any such statement was contrary to its legitimate interests (and certainly not in these Tuschl I cases).³ Indeed, members of the law firm Max-Planck nominates for its new power of attorney similarly have submitted affidavits in the litigation between the parties, so presumably Max-Planck must acknowledge that the submission of affidavits standing alone is not enough to require disqualification. However, the Office of Petitions need not wade into this factual record and, instead, can deny the Petition on the basis of the 2001 and 2003 Agreements alone.⁴ Both of these agreements demonstrate that Max-Planck agreed with its co-owners that Whitehead shall be responsible for the prosecution of the Tuschl I applications and that, accordingly, Max-Planck does not have "sufficient cause" to revoke the power of attorney. Moreover, Max-Planck's submission of its Petition, without citation or even reference to the extensive materials from the related litigation, suggest that its Petition is merely an attempt to avoid having any decision rendered based on the full, complex record.

Fourth, Max-Planck's citation of several provisions of the rules of practice before this Office are inapposite. 37 CFR 10.66 addresses conflicts of interest between multiple clients. Max-Planck, however, has not established that it is a client of Wolf Greenfield. A power of attorney is not sufficient to do so. *See, e.g., Sun Studs, Inc. v. Applied Theory Assocs., Inc.*, 772

² Whitehead has submitted all papers filed to date with the Court in these two cases in its July 10, 2009 and July 29, 2009 Information Disclosure Statements.

³ Max-Planck appears to object to the conduct of these attorneys because it perceives that conduct to be contrary to its interests in Tuschl II, but Wolf Greenfield holds no power of attorney with respect to Tuschl II, and has been acting solely in the interests of the co-owners of Tuschl I (including Max-Planck) to prosecute the Tuschl I applications.

⁴ An examination of this factual record by the Office of Petitions undoubtedly would be a prerequisite to any determination as to the veracity of the allegations made by Max-Planck in its Petition.

F.2d 1557, 1568 (Fed. Cir. 1985) (“General principles of agency law indicate that a power of attorney does not ipso facto create an attorney-client relationship.”). Max-Planck has not submitted any other basis for believing that it is a client of Wolf Greenfield. 37 CFR 10.63, which addresses withdrawal when the practitioner becomes a witness, also does not support the Petition. That section includes an exception (set forth in section 10.63(a)) for circumstances in which there would be a “substantial hardship on the client because of the distinctive value of the practitioner’s or the practitioner’s firm as counsel in the particular case.” 37 CFR 10.62(b)(4) (incorporated into 10.63(a)). Here, withdrawal by Wolf Greenfield would cause serious hardship to its client, Whitehead. Wolf Greenfield is intimately familiar with the technology at issue, and has been involved in prosecuting the applications in question for over five years. It would be difficult and costly, if not impossible, to find suitable replacement counsel now, and attempting to do so would greatly delay the prosecution of applications that have already been pending for more than eight years. Moreover, as a practical matter, it may be impossible for Whitehead to engage new counsel because any potential replacement counsel would recognize that it could be subject to a lawsuit for damages by Max-Planck.

In sum, Max-Planck, as the assignee of only a partial interest in the Tuschl I applications, has fallen well short of showing the “sufficient cause” required under 37 C.F.R. § 1.36(a) to revoke the power of attorney. *See* 37 C.F.R. § 1.36(a) (“[F]ewer than all of the assignees of the entire interest of the applicant” “may revoke the power of attorney only upon a showing of sufficient cause.”); *see also* Manual Patent Examining Procedure (“MPEP”) § 402.10 (“Papers revoking a power of attorney in an application . . . will not be accepted by the Office when signed by less than all of . . . owners of the application unless they are accompanied by a petition under 37 CFR [§] 1.36(a) . . . with a showing of sufficient cause.”). A grant of the Max-Planck Petition under these circumstances would be contrary to both 37 C.F.R. § 1.36(a) and MPEP § 402.10. Thus, the Office of Petitions should deny the Max-Planck Petition.

Applicant believes no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 23/2825 under Docket No. W0571.70010US02 from which the undersigned is authorized to draw.

Dated: July 31, 2009

Respectfully submitted,

By /Helen C. Lockhart/
Helen C. Lockhart
Registration No.: 39,248
WOLF, GREENFIELD & SACKS, P.C.
Federal Reserve Plaza
600 Atlantic Avenue
Boston, Massachusetts 02210-2206
617.646.8000

EXHIBIT A

JOINT INVENTION AND JOINT MARKETING AGREEMENT

This Agreement is made and entered into this 19th day of September, 2001, (the "EFFECTIVE DATE") by and between the MASSACHUSETTS INSTITUTE OF TECHNOLOGY, a corporation duly organized and existing under the laws of the Commonwealth of Massachusetts and having its principal office at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139, U.S.A. (hereinafter referred to as "M.I.T."), the Whitehead Institute for Biomedical Research ("WHITEHEAD"), a Delaware corporation, with a principal office at Nine Cambridge Center, Cambridge, Massachusetts 02142, UNIVERSITY OF MASSACHUSETTS, a corporation duly organized and existing under the laws of the Commonwealth of Massachusetts and having its principal office at 365 Plantation Street, Suite 130, Worcester, MA, USA 01605 (hereinafter referred to as "UMASS"), MAX-PLANCK-GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V., a corporation duly organized and existing under the laws of Germany and having its principal office at Hofgartenstrasse 8, 80539 Muenchen, Germany (hereinafter referred to as "MPG"), and GARCHING INNOVATION GMBH, a corporation duly organized and existing under the laws of Germany and having its principal office at Hofgartenstrasse 8, 80539 Muenchen, Germany (hereinafter referred to as "GI").

WHEREAS, M.I.T., WHITEHEAD, UMASS, and MPG (hereinafter referred to as the "JOINT OWNERS") jointly own by assignment the invention referred to as M.I.T. Case 8768W, WHITEHEAD case WI00-06, GI case GI 2716 KTM, UMASS case 01-36 entitled "RNA Sequence-Specific Mediators of RNA Interference", by David P. Bartel, Phillip A. Sharp, Thomas Tuschl, and Phillip D. Zamore, as described in the patent applications entitled "RNA Sequence-Specific Mediators of RNA Interference", by David P. Bartel, Phillip A. Sharp, Thomas Tuschl, And Phillip D. Zamore, USSN 09/821832, USSN 60/265232, and PCT US01/10188, and any divisionals, continuations, continuation-in-part applications directed to the same subject matter, and continued prosecution applications (and their relevant international equivalents) of the patent applications (hereinafter "JOINT INVENTION");

WHEREAS MPG owns by assignment the invention referred to as the patent application entitled "RNA Interference Mediating Small RNA Molecules," by Thomas Tuschl, Sayda Elbashir and Winfried Lendeckel, European Serial Number 00126325, and any divisionals, continuations, continuation-in-part applications directed to the same subject matter, and continued prosecution applications (and their relevant international equivalents) of the patent applications (hereinafter "MPG INVENTION");

WHEREAS, MPG has authorized GI to act as its sole and exclusive agent for the purposes of licensing the MPG INVENTION and has authorized GI to enter into this Joint Invention and Joint Marketing Agreement on its behalf;

WHEREAS, M.I.T., WHITEHEAD, UMASS, and MPG wish to patent and license the JOINT INVENTION in the most expeditious manner for the public benefit; and

WHEREAS, GI, for the instances described below, desires that M.I.T. undertake and control the commercialization of the MPG INVENTION and license it jointly with the JOINT INVENTION.

NOW, THEREFORE, in consideration of the premises and the mutual covenants contained herein, the parties agree as follows:

1. Patent Management

(a) WHITEHEAD shall manage the patent filing, prosecution and maintenance of the JOINT INVENTION. M.I.T., UMASS, and MPG will be copied on all patent correspondence. The prosecution, filing and maintenance of all JOINT INVENTION patent applications and patents will be the primary responsibility of WHITEHEAD; provided, however, M.I.T., UMASS, and MPG will have reasonable opportunities to advise WHITEHEAD and will cooperate with WHITEHEAD in such prosecution, filing and maintenance.

(b) GI shall manage the patent filing, prosecution and maintenance of the MPG INVENTION.

2. Licensing Authority

(a) Patents for the JOINT INVENTION and the MPG INVENTION shall be licensed together as a single package. (hereinafter the "PATENT PACKAGE")

(b) WHITEHEAD, UMASS, and GI hereby appoint M.I.T. as their exclusive agent to issue licenses or options to their rights to the PATENT PACKAGE in the following fields:

(i) non-exclusive licensing to distributors for sale of research reagents; and

(ii) non-exclusive internal use licenses to non-European companies for research purposes.

WHITEHEAD, UMASS, and GI will receive copies of license and option agreements, and, on request, of significant correspondence and reports on marketing and licensing efforts.

(c) WHITEHEAD, UMASS, and M.I.T. hereby appoint GI as their exclusive agent to issue non-exclusive internal use licenses or options to their rights to the PATENT PACKAGE to European companies for research purposes.

WHITEHEAD, UMASS, and M.I.T. will receive copies of license and option agreements, and, on request, of significant correspondence and reports on marketing and licensing efforts.

(d) All parties agree that rights to license the JOINT INVENTION and the MPG INVENTION for therapeutic purposes and other uses such as vaccines are not covered by this Agreement. Rights to license the JOINT INVENTION and/or the MPG INVENTION for therapeutic purposes shall be covered under a separate agreement.

(e) The licensing agent, whether M.I.T. or GI, shall maintain complete and accurate records relating to the rights and obligations under this Agreement and any amounts payable to the JOINT OWNERS in relation to this Agreement, which records shall contain sufficient information to permit JOINT OWNERS to confirm the accuracy of any reports delivered to JOINT OWNERS and compliance in other respects with this Agreement. The relevant party shall retain such records for at least five (5) years following the end of the calendar year to which they pertain, during which time the JOINT OWNERS, or the JOINT OWNERS' appointed agents, shall have the right, at the JOINT OWNERS' expense, to inspect such records during normal business hours to verify any reports and payments made or compliance in other respects under this Agreement. In the event that any audit performed under this Section reveals an underpayment in excess of ten percent (10%), the licensing agent, whether M.I.T. or GI, shall bear the full cost of such audit and shall remit any amounts due to the JOINT OWNERS within thirty (30) days of receiving notice thereof from the JOINT OWNERS.

3. Patent Maintenance

(a) WHITEHEAD will pay for all reasonable out-of-pocket expenses, including attorney's fees, incurred in the filing, prosecution, and maintenance of patent rights for the JOINT INVENTION. MPG will pay for all reasonable out-of-pocket expenses, including attorney's fees, incurred in the filing, prosecution, and maintenance of patent rights for the MPG INVENTION.

(b) In the event that any JOINT OWNER wishes to cease prosecution or abandon any of the patent applications or patents of the JOINT INVENTION (hereinafter "ABANDONED RIGHTS"), such party will notify the other in writing. The other party will have the right to continue prosecution or maintenance of the ABANDONED RIGHTS at their discretion. Thereafter, revenue received by M.I.T. or GI will continue to be distributed per Paragraph 4, except that the abandoning party will not receive its share for revenue associated with the ABANDONED RIGHTS.

(c) Prior to commencing any action against an infringer of the patents of the JOINT INVENTION, the JOINT OWNERS shall consult with every other JOINT OWNER and shall consider the views of such JOINT OWNERS regarding the advisability of the proposed action and its effect on existing licenses and the public interest. JOINT OWNERS shall not enter into any settlement, consent judgment, or other voluntary final disposition of any infringement action under this Section without the prior written consent of the other JOINT OWNERS.

4. Sharing of Revenue

A Five Percent (5%) administration fee shall be deducted from all revenue and equity received by the licensing agent, whether M.I.T. or GI, from license fees and royalties from the PATENT PACKAGE. Thereafter all remaining revenue and equity shall be distributed by M.I.T. and GI on an annual basis, within ninety (90) days of the close of the fiscal year, as follows:

(a) 50% shall be paid to GI and shall be attributed to the MPG INVENTION. Such revenue shall be used to reimburse GI for any unreimbursed patent expense attributed to the MPG INVENTION.

(b) 50% shall be paid to M.I.T. and such revenue shall be first used to reimburse WHITEHEAD for any unreimbursed patent expense attributed to the JOINT INVENTION.

Thereafter, remaining revenues shall be distributed in the following way by M.I.T.:

i) 25% of this income shall be paid to GI, attributed to MPG's institutional share and Tom Tuschl's partial inventor share.

ii) 25% of this income shall be attributed to the JOINT INVENTION and shall go the inventors of the JOINT INVENTION as follows:

| | |
|---------|--------|
| Tuschl: | 13.33% |
| Zamore | 46.66% |
| Sharp | 13.33% |
| Bartel | 26.66% |

iii) The remaining 50% of the income attributed to the JOINT INVENTION shall be distributed to the institutions as follows:

| | |
|-----------|-----|
| Whitehead | 60% |
| M.I.T. | 20% |
| U Mass | 20% |

A list of all inventors, their current addresses and Social Security Numbers is Appendix A.

5. Notice

Any payment, notice or other communication pursuant to this Agreement shall be sufficiently made or given on the date of mailing if sent to such party by certified first class mail, return receipt requested, postage prepaid, addressed to it at its address below or as it shall designate by written notice given to the other party:

In the case of M.I.T.:
Director
Technology Licensing Office
Massachusetts Institute of Technology
77 Massachusetts Avenue, Room NE25-230
Cambridge, Massachusetts 02139

In the case of WHITEHEAD:
Vice President
Whitehead Institute for Biomedical Research
Nine Cambridge Center
Cambridge, MA 02142
Attention: Vice President

In the case of UMASS :
Executive Director
Office of Commercial Ventures and Intellectual Property
University of Massachusetts
365 Plantation Street, Suite 130
Worcester, MA, USA 01605

In the case of GI :
Managing Director
Garching Innovation GmbH
Hofgartenstrasse 8
80539 Muenchen

6. Miscellaneous

(a) No Representations or Warranties. THE JOINT OWNERS MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE PATENT PACKAGE, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, VALIDITY OF PATENT PACKAGE CLAIMS, WHETHER ISSUED OR PENDING, AND THE ABSENCE OF LATENT OR OTHER DEFECTS, WHETHER OR NOT DISCOVERABLE. Specifically, and not to limit the foregoing, the JOINT OWNERS make no warranty or representation (i) regarding the validity or scope of the PATENT PACKAGE, and (ii) that the exploitation of the PATENT PACKAGE will not infringe any patents or other intellectual property rights of the JOINT OWNERS or of a third party.

IN NO EVENT SHALL THE JOINT OWNERS, THEIR TRUSTEES, DIRECTORS, OFFICERS, EMPLOYEES AND AFFILIATES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ECONOMIC DAMAGES OR INJURY TO PROPERTY AND LOST PROFITS, REGARDLESS OF WHETHER THE JOINT OWNERS SHALL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT SHALL KNOW OF THE POSSIBILITY OF THE FOREGOING.

(b) The term of this Agreement, which shall commence on the EFFECTIVE DATE and shall remain in effect until the expiration or abandonment of all issued patents and filed patent applications within the PATENT PACKAGE, unless earlier terminated in accordance with the provisions of this Agreement.

(c) In the event a JOINT OWNER commits a material breach of its obligations under this Agreement and fails to cure that breach within sixty (60) days after receiving written notice thereof, any JOINT OWNER may terminate this Agreement immediately upon written notice to all JOINT OWNERS.

(d) This Agreement is personal to the JOINT OWNERS and no rights or obligations may be assigned by any JOINT OWNERS without the prior written consent of the other JOINT OWNERS.

IN WITNESS WHEREOF, the parties have duly executed this Agreement the day and year set forth below.

MASSACHUSETTS INSTITUTE OF
TECHNOLOGY

By *Lita Nelsen*
Name LITA L. NELSEN, DIRECTOR
Title TECHNOLOGY LICENSING OFFICE
Date Sept 20, 2001

WHITEHEAD INSTITUTE FOR
BIOMEDICAL RESEARCH

By *John Pratt*
Name John Pratt
Title Vice President
Date 9/20/01

UNIVERSITY OF MASSACHUSETTS

By *Joseph F.X. McGuirl*
Name Joseph F.X. McGuirl
Title Executive Director, CVIP
Date September 26, 2001

GARCHING INNOVATION GMBH

By *Dr. Bernhard Hertel*
Name Dr. Bernhard Hertel
Title Geschäftsführer
Date October 11, 2001

APPENDIX A

| Inventor Name | Address | SSN |
|----------------|--|-------------|
| David Bartel | 2 Bowker Street, Brookline, MA 02146 | 492-56-2321 |
| Phillip Sharp | 36 Fairmont Avenue, Newton, MA 02458 | 400-60-7704 |
| Thomas Tuschl | | |
| Phillip Zamore | 500 Green Street, Northborough, MA 01532 | 132-50-1944 |

EXHIBIT B

JOINT INVENTION AND JOINT MARKETING AGREEMENT FOR RNAI THERAPEUTIC PURPOSES

This Joint Invention and Joint Marketing Agreement (the "Agreement") is made and entered into this 30th day of July, 2003, (the "EFFECTIVE DATE") by and between the MASSACHUSETTS INSTITUTE OF TECHNOLOGY ("M.I.T."), a corporation duly organized and existing under the laws of the Commonwealth of Massachusetts and having its principal office at 77 Massachusetts Avenue, Cambridge, Massachusetts 02139, USA, the Whitehead Institute for Biomedical Research ("WHITEHEAD"), a Delaware corporation, with a principal office at Nine Cambridge Center, Cambridge, Massachusetts 02142, , and GARCHING INNOVATION GMBH ("GI"), a corporation duly organized and existing under the laws of Germany and having its principal office at Hofgartenstrasse 8, 80539 Muenchen, Germany, the technology transfer agency of MAX-PLANCK-GESELLSCHAFT ZUR FOERDERUNG DER WISSENSCHAFTEN E.V. ("MPG"), a corporation duly organized and existing under the laws of Germany and having its principal office at Hofgartenstrasse 8, 80539 Muenchen, Germany.

WHEREAS, M.I.T., WHITEHEAD, MPG and the UNIVERSITY OF MASSACHUSETTS ("UMASS"), a corporation duly organized and existing under the laws of the Commonwealth of Massachusetts and having its principal office at 365 Plantation Street, Suite 130, Worcester, MA, USA 01605, (collectively the "JOINT OWNERS") jointly own by assignment and by law the invention referred to as M.I.T. Case 8768W, WHITEHEAD case WI00-06, GI case GI 2716 KTM, UMASS case 01-36 entitled "RNA Sequence-Specific Mediators of RNA Interference", by David P. Bartel, Phillip A. Sharp, Thomas Tuschl, and Phillip D. Zamore, as described in the patent applications entitled "RNA Sequence-Specific Mediators of RNA Interference", by David P. Bartel, Phillip A. Sharp, Thomas Tuschl, and Phillip D. Zamore, USSN 09/821832, USSN 60/265232, and PCT US01/10188, and any divisionals, continuations, continuation-in-part applications directed to the same subject matter, and continued prosecution applications (and their relevant international equivalents) of the patent applications (hereinafter "JOINT INVENTION");

WHEREAS, MPG owns by assignment and by law the invention referred to as the patent application entitled "RNA Interference Mediating Small RNA Molecules," by Thomas Tuschl, Sayda Elbashir and Winfried Lendeckel, European Serial Number 00126325, and PCT/EP01/13968, and any divisionals, continuations, continuation-in-part applications directed to the same subject matter, and continued prosecution applications (and their relevant international equivalents) of the patent applications (hereinafter "MPG INVENTION");

WHEREAS, MPG has authorized GI to act as its sole and exclusive agent for the purposes of licensing the MPG INVENTION, and has authorized GI to enter into this Agreement in its own name;

WHEREAS, the JOINT OWNERS have already signed a Joint Invention and Joint Marketing Agreement for the commercialization of the MPG INVENTION and the JOINT INVENTION for

the purposes of distribution of RNAi for sale as research reagents and internal research use (the "Old Agreement");

WHEREAS, M.I.T., WHITEHEAD and MPG (the "REMAINING JOINT OWNERS") desire that GI undertakes and controls the commercialization of the MPG INVENTION and the JOINT INVENTION for therapeutic purposes;

WHEREAS, UMASS explicitly refuses to consent to such commercialization, and its ownership position in the JOINT INVENTION will be excluded from the JOINT INVENTION (the "REMAINING JOINT INVENTION") regarding this Agreement and the intended commercialization agreements;

WHEREAS, the REMAINING JOINT OWNERS and GI agree that the commercialization of the MPG INVENTION and the REMAINING JOINT INVENTION for therapeutic purposes shall result in two semi-exclusive licenses, with one license to the US-based company Alnylam Pharmaceuticals Inc., Cambridge, USA ("Alnylam"), and one license to the European-based company Ribopharma AG, Kulmbach, Germany ("Ribopharma"), Alnylam and Ribopharma hereinafter collectively the "THERAPEUTIC LICENSEES";

WHEREAS, the REMAINING JOINT OWNERS and GI agree that the relationship of all JOINT OWNERS regarding the JOINT INVENTION shall be governed by the Old Agreement, and the relationship of the REMAINING JOINT OWNERS regarding the REMAINING JOINT INVENTION shall be governed by this Agreement;

NOW, THEREFORE, the parties agree as follows:

1. Patent Management

(a) The patent filing, prosecution and maintenance of the REMAINING JOINT INVENTION shall be managed by and be the primary responsibility of WHITEHEAD. WHITEHEAD shall (i) keep the REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES reasonably informed as to the filing, prosecution, maintenance and abandonment of the REMAINING JOINT INVENTION, (ii) furnish the REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES copies of documents relevant to any such filing, prosecution maintenance and abandonment, and (iii) allow the REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES reasonable opportunity to comment and advise on patent attorneys to be used and on documents to be filed with any patent office which would affect the REMAINING JOINT INVENTION, and (iv) give good faith consideration to the comments and advice of the REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES.

(b) The patent filing, prosecution and maintenance of the MPG INVENTION shall be managed by and be the primary responsibility of GI. GI shall (i) keep the REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES reasonably informed as to the filing, prosecution, maintenance and abandonment of the MPG INVENTION, (ii) furnish the REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES copies of documents relevant to any such filing, prosecution maintenance and abandonment, and (iii) allow the

REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES reasonable opportunity to comment and advise on patent attorneys to be used and on documents to be filed with any patent office which would affect the MPG INVENTION, and (iv) give good faith consideration to the comments and advice of the REMAINING JOINT OWNERS and the THERAPEUTIC LICENSEES.

2. Patent Maintenance

(a) WHITEHEAD shall pay for all reasonable expenses, including attorney's fees, incurred in the filing, prosecution, and maintenance of patent rights for the REMAINING JOINT INVENTION. MPG shall reimburse WHITEHEAD for fifty percent (50%) of such costs for the JOINT INVENTION, within sixty days of invoicing. MPG shall pay for all reasonable expenses, including attorney's fees, incurred in the filing, prosecution, and maintenance of patent rights for the MPG INVENTION.

(b) In the event that any REMAINING JOINT OWNER wishes to cease prosecution or abandon any of the patent applications or patents of the REMAINING JOINT INVENTION (hereinafter "ABANDONED REMAINING JOINT RIGHTS"), such party will notify the other REMAINING JOINT OWNERS in writing in due time. The other REMAINING JOINT OWNERS shall have the right to continue prosecution or maintenance of the ABANDONED REMAINING JOINT RIGHTS at their discretion and their expense. Thereafter, revenues received by GI will continue to be distributed per Paragraph 5, except that the abandoning party will not receive its share for revenues associated with the ABANDONED REMAINING JOINT RIGHTS. If all REMAINING JOINT OWNERS wish to cease prosecution or abandon the ABANDONED REMAINING JOINT RIGHTS, GI shall have the right to offer the THERAPEUTIC LICENSEES to continue prosecution or maintenance of the ABANDONED REMAINING JOINT RIGHTS at their discretion and their expense.

(c) In the event that GI wishes to cease prosecution or abandon any of the patent applications or patents of the MPG INVENTION (hereinafter "ABANDONED MPG RIGHTS"), GI will notify the other REMAINING JOINT OWNERS in writing in due time. The other REMAINING JOINT OWNERS will have the right to continue prosecution or maintenance of the ABANDONED MPG RIGHTS at their discretion and their expense. Thereafter, revenues received by GI will continue to be distributed per Paragraph 5, except that MPG will not receive its share for revenues associated with the ABANDONED MPG RIGHTS. If all REMAINING JOINT OWNERS wish to cease prosecution or abandon the ABANDONED MPG RIGHTS, GI shall have the right to offer the THERAPEUTIC LICENSEES to continue prosecution or maintenance of the ABANDONED MPG RIGHTS at their discretion and their expense.

3. Patent Infringement

(a) The REMAINING JOINT OWNERS shall inform each other promptly in writing of any alleged infringement of the patents of the REMAINING JOINT INVENTION by a third party, and of any available evidence thereof.

(b) Prior to commencing any action against an infringer of the patents of the REMAINING JOINT INVENTION, the REMAINING JOINT OWNERS shall consult with every

other REMAINING JOINT OWNER and shall consider the views of such REMAINING JOINT OWNERS regarding the advisability of the proposed action and its effect on existing licenses and the public interest. The REMAINING JOINT OWNERS shall mutually agree whether infringements of the patents of the REMAINING JOINT INVENTION shall be prosecuted by any or all REMAINING JOINT OWNERS; they will cooperate in all respects. The REMAINING JOINT OWNERS shall not enter into any settlement, consent judgment, or other voluntary final disposition of any infringement action under this Section without the prior written consent of the other REMAINING JOINT OWNERS. The REMAINING JOINT OWNERS shall agree in good faith on the sharing of the total cost of any such joint infringement action and the sharing of any recovery or damages derived therefrom.

GI shall have the right to offer to the THERAPEUTIC LICENSEES to join the REMAINING JOINT OWNERS' prosecution of any infringements of the patents of the REMAINING JOINT INVENTION. In any such joint infringement suits, the REMAINING JOINT OWNERS and THERAPEUTIC LICENSEES shall cooperate in all respects. The REMAINING JOINT OWNERS and THERAPEUTIC LICENSEES shall agree in good faith on the sharing of the total cost of any such joint infringement action and the sharing of any recovery or damages derived therefrom.

In the event that the REMAINING JOINT OWNERS decide not to prosecute infringements of the patents of the REMAINING JOINT INVENTION, neither solely nor jointly with the THERAPEUTIC LICENSEES, GI shall have the right to offer to the THERAPEUTIC LICENSEES to prosecute any such infringement in their own discretion and at their own expense. The REMAINING JOINT OWNERS shall, at the expense of the THERAPEUTIC LICENSEES, cooperate. The total cost of any such sole infringement action shall be borne by the THERAPEUTIC LICENSEES, and the THERAPEUTIC LICENSEES shall keep any recovery or damages derived therefrom.

In any event covered by this Section 3. b), the REMAINING JOINT OWNERS shall respect, and shall cause the THERAPEUTIC LICENSEES to respect, the rights of UMASS according to Section 3. c) of the Old Agreement.

(c) MPG shall have the right to prosecute any infringement of the patents of the MPG INVENTION in its discretion and at its expense. However, prior to commencing any action against an infringer of the patents of the MPG INVENTION, MPG shall consult with every other REMAINING JOINT OWNER and shall consider the views of such REMAINING JOINT OWNERS regarding the advisability of the proposed action and its effect on existing licenses and the public interest. The total cost of any such infringement action shall be borne by MPG, and MPG shall keep any recovery or damages derived therefrom.

MPG may ask the other REMAINING JOINT OWNERS and/or the the THERAPEUTIC LICENSEES to join MPG's prosecution of any infringements of the patents of the MPG INVENTION. In any such joint infringement suits, the REMAINING JOINT OWNERS and/or the THERAPEUTIC LICENSEES shall cooperate in all respects. The REMAINING JOINT OWNERS and/or the THERAPEUTIC LICENSEES shall agree in good faith on the sharing of the total cost of any such joint infringement action and the sharing of any recovery or damages derived therefrom.

In the event that MPG and the other REMAINING JOINT OWNERS decide not to prosecute infringements of the patents of the MPG INVENTION, neither solely nor jointly with

the THERAPEUTIC LICENSEES, GI shall have the right to offer to the THERAPEUTIC LICENSEES to prosecute any such infringement in their own discretion and at their own expense. MPG and the other REMAINING JOINT OWNERS shall, at the expense of the THERAPEUTIC LICENSEES, cooperate. The total cost of any such sole infringement action shall be borne by the THERAPEUTIC LICENSEES, and the THERAPEUTIC LICENSEES shall keep any recovery or damages derived therefrom.

4. Licensing Authority

(a) Patents for the REMAINING JOINT INVENTION and the MPG INVENTION shall be commercialized together as a single package (hereinafter the "PATENT PACKAGE").

(b) The REMAINING JOINT OWNERS hereby appoint GI as their exclusive agent to issue licenses or options to their rights to the PATENT PACKAGE for therapeutic purposes as follows: GI shall grant two non-exclusive licenses with the right to grant sublicenses, one to Alnylam or its legal successor, and one to Ribopharma or its legal successor.

(c) The effectiveness of any license or option agreement signed by GI is subject to the approval of the REMAINING JOINT OWNERS, which shall be requested by GI. After the approval of any license or option agreement, the REMAINING JOINT OWNERS will receive copies thereof and of significant correspondence and reports on marketing and licensing efforts.

(d) GI shall maintain complete and accurate records relating to the rights and obligations under this Agreement and any amounts payable to the REMAINING JOINT OWNERS in relation to this Agreement, which records shall contain sufficient information to permit REMAINING JOINT OWNERS to confirm the accuracy of any reports delivered to REMAINING JOINT OWNERS and compliance in other respects with this Agreement. GI shall retain such records for at least five (5) years following the end of the calendar year to which they pertain, during which time the REMAINING JOINT OWNERS, or the REMAINING JOINT OWNERS' appointed agents, shall have the right, at the REMAINING JOINT OWNERS' expense, to inspect such records during normal business hours to verify any reports and payments made or compliance in other respects under this Agreement. In the event that any audit performed under this Section reveals an underpayment in excess of ten percent (10%), GI shall bear the full cost of such audit and shall remit any amounts due to the REMAINING JOINT OWNERS within thirty (30) days of receiving notice thereof from the REMAINING JOINT OWNERS.

5. Sharing of Revenues

6. Sharing of Equity

7. Notice

Any payment, notice or other communication pursuant to this Agreement shall be sufficiently made or given on the date of mailing if sent to such party by certified first class mail, return receipt requested, postage prepaid, addressed to it at its address below or as it shall designate by written notice given to the other party:

In the case of M.I.T.:
Director
Technology Licensing Office
Massachusetts Institute of Technology
77 Massachusetts Avenue, Room NE25-230
Cambridge, Massachusetts 02139

In the case of WHITEHEAD:
Vice President
Whitehead Institute for Biomedical Research
Nine Cambridge Center

Cambridge, MA 02142
Attention: Vice President

In the case of GI :
Managing Director
Garching Innovation GmbH
Hofgartenstrasse 8
80539 Muenchen, Germany

8. Miscellaneous

(a) No Representations or Warranties. THE REMAINING JOINT OWNERS MAKE NO REPRESENTATIONS OR WARRANTIES OF ANY KIND CONCERNING THE PATENT PACKAGE, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NONINFRINGEMENT, VALIDITY OF PATENT PACKAGE CLAIMS, WHETHER ISSUED OR PENDING, AND THE ABSENCE OF LATENT OR OTHER DEFECTS, WHETHER OR NOT DISCOVERABLE. Specifically, and not to limit the foregoing, the REMAINING JOINT OWNERS make no warranty or representation (i) regarding the validity or scope of the PATENT PACKAGE, and (ii) that the exploitation of the PATENT PACKAGE will not infringe any patents or other intellectual property rights of the REMAINING JOINT OWNERS or of a third party.

IN NO EVENT SHALL THE REMAINING JOINT OWNERS, THEIR TRUSTEES, DIRECTORS, OFFICERS, EMPLOYEES AND AFFILIATES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES OF ANY KIND, INCLUDING ECONOMIC DAMAGES OR INJURY TO PROPERTY AND LOST PROFITS, REGARDLESS OF WHETHER THE REMAINING JOINT OWNERS SHALL BE ADVISED, SHALL HAVE OTHER REASON TO KNOW, OR IN FACT SHALL KNOW OF THE POSSIBILITY OF THE FOREGOING.

(b) The REMAINING JOINT OWNERS shall keep confidential any information marked confidential which is disclosed to them by GI resulting from the license agreements between GI and the THERAPEUTIC LICENSEES during the term of this Agreement and for 5 (five) years thereafter. The REMAINING JOINT OWNERS shall not use such information for any purposes other than those necessary to directly further the purpose of this Agreement.

(c) This Agreement shall commence on the EFFECTIVE DATE and shall remain in effect until the expiration or abandonment of all issued patents and filed patent applications within the PATENT PACKAGE, unless earlier terminated (i) in accordance with the provisions of this Agreement, or (ii) upon the termination of all therapeutic license agreements relating to the PATENT PACKAGE as specified in Section 4. (b) above, whichever occurs first.

(d) In the event a REMAINING JOINT OWNER commits a material breach of its obligations under this Agreement and fails to cure that breach within sixty (60) days after receiving written notice thereof, any REMAINING JOINT OWNER may terminate this Agreement immediately upon written notice to all REMAINING JOINT OWNERS.

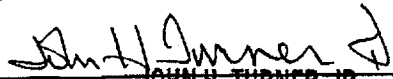
(e) This Agreement is personal to the REMAINING JOINT OWNERS and no rights or obligations may be assigned by any REMAINING JOINT OWNERS without the prior written consent of the other REMAINING JOINT OWNERS.

(f) Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to its subject matter and supersedes all prior agreements or understandings between the parties relating to its subject matter, with the exception of (i) the Letter Agreement among the parties and Alnylam, dated December 19, 2002, and (2) the Letter Agreement by M.I.T. and Whitehead, dated the date hereof, acknowledging and approving the commercialization efforts of GI relating to this subject matter.


9. GI hereby warrants that it is receiving no other consideration for the MPG INVENTION or the REMAINING JOINT INVENTION from Alnylam, Ribopharma or any other third party (including no other side deal arrangements), other than the cash and equity which will be shared according to the formula of this Agreement.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized representatives.


MASSACHUSETTS INSTITUTE OF
TECHNOLOGY

By 
Name JOHN H. TURNER, JR.
Title ASSOCIATE DIRECTOR
Date 30 July 2003

WHITEHEAD INSTITUTE FOR
BIOMEDICAL RESEARCH

By 
Name John Pratt
Title Vice President
Date 30 July 2003

GARCHING INNOVATION GMBH

By 
Name DR. BERNHARD HERTEL
Title MANAGING DIRECTOR
Date 30.7.03



Appendix A

Example for purpose of explanation. The number of equity shares transferred by THERAPUETIC LICENSEES might differ from this example.

| Equity Distribution | | |
|---------------------|---------------------------|--------------------------------|
| Party | Percent of Equity Granted | Total Shares of Equity Granted |
| GI | 67.70 | 608,050 |
| WHITEHEAD | 23.01% | 206,713 |
| M.I.T. | 9.29% | 83,410 |
| TOTAL | 100.00% | 898,173 |